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**SUPPLEMENTAL INFORMATION DISCLOSURE
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(PPTO-1449)

ATTY. DOCKET NO.
GC541-3-D1
Previously 23623-7076

SERIAL NO.
10/062,970

APPLICANT
Jones et al.

FILING DATE
February 1, 2002

GROUP ART UNIT
1623

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

EXAM'R INITIAL		DOCUMENT NUMBER	DATE	NAME	Class	Subclass	Filing Date If Appropriate
	A1	*5,403,737	04/04/95	Abrahmsen et al.			
	A2	*5,629,173	05/13/97	Abrahmsen et al.			
	A3	*5,316,935	05/31/94	Arnold et al.			
	A4	*5,208,158	05/04/93	Bech et al.			
	A5	*5,244,791	09/14/93	Estell			
	A6	*5,316,941	05/31/94	Estell et al.			
	A7	*5,955,340	02/21/99	Bott			
	A8	*5,340,735	08/23/94	Christiansen et al.			

FOREIGN PATENT DOCUMENTS

EXAM'R INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	Subclass	TRANSLAT'N
LCM	B1	EP 0 328 229 A1	08/16/89	EP			
	B2	*WO 00/01712	01/13/00	PCT			
LCM	B3	WO 91/16423	04/18/91	PCT			
LCM	B4	WO 96/27671	02/27/96	PCT			
LCM	B5	WO 97/37007	10/09/97	PCT			
LCM	B6	WO 98/23732	06/04/98	PCT			
LCM	B7	WO 99/20723	04/29/99	PCT			
LCM	B8	WO 99/37323	07/29/99	PCT			
LCM	B9	WO 99/37324	07/29/99	PCT			

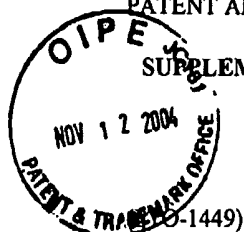
OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

LCM	C1	Bech et al., "Chemical Modifications of a Cysteiny Residue Introduced in the Binding Site of Carboxypeptidase Y by Site-Directed Mutagenesis," <u>Carlsberg Res. Commun.</u> , 53:381-393 (1988)
LCM	C2	Bech et al., "Significance of Hydrophobic S ₄ -P ₄ Interactions in Subtilisin 309 from <i>Bacillus lentus</i> ," <u>Biochemistry</u> , 32:2847-2852 (1993)
LCM	C3	Berglund et al., "Altering the Specificity of Subtilisin <i>B. Lentus</i> by Combining Site-Directed Mutagenesis and Chemical Modification," <u>Bioorganic & Mechanical Chemistry Letters</u> , 6:2507-2512 (1996)
	C4	*Berglund et al., "Chemical Modification of Cysteine Mutants of Subtilisin <i>Bacillus Lentus</i> Can Create Better Catalysts Than The Wild-Type Enzyme," <u>J. Am. Chem. Soc.</u> , 119:5265-5266 (1997)

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LCM	C5	Betzel et al., "Crystal Structure of the Alkaline Proteinase Savinase TM from <i>Bacillus lentus</i> at 1.4 Å Resolution," <i>J. Mol. Biol.</i> , 223:427-445(1992)
LCM	C6	Bonneau et al., "Alteration of the Specificity of Subtilisin BPN' by Site-Directed Mutagenesis in its S ₁ and S ₁ ' Binding Sites," <i>J. Am. Chem. Soc.</i> , 113:1026-30 (1991)
LCM	C7	Brocklehurst, "Specific Covalent Modification of Thiols: Applications in the Study of Enzymes and Other Biomolecules," <i>Int. J. Biochem.</i> , 10:259-274 (1979)
LCM	C8	Bruice et al., "Novel Alkyl Alkanethiolsulfonate Sulfhydryl Reagents. Modification of Derivatives of L-Cysteine," <i>Journal of Protein Chemistry</i> , 1:47-58 (1982)
LCM	C9	Chen et al., "Probing the S-1' Subsite Selectivity of an Industrial Alkaline Protease in Anhydrous t-Butanol," <i>Bioorganic & Medicinal Chemistry Letters</i> , 3(4):727-33 (1993)
LCM	C10	Davies et al., "A Semisynthetic Metalloenzyme Based on a Protein Cavity That Catalyzes the Enantioselective Hydrolysis of Ester and Amide Substrates," <i>J. Am. Chem. Soc.</i> , 119:11643-11652 (1997)
LCM	C11	Davis, B.G., et al., "Altering the specificity of subtilisin <i>Bacillus lentus</i> through the introduction of positive charge at single amino acid sites," <i>Bioorganic and Medicinal Chemistry</i> , (1999 Nov.) 7 (11) 2303-11, XPO000892841
LCM	C12	Davis, B.G., et al., "Controlled site selective protein glycosylation for precise glycan structure catalytic activity relationships," <i>Bioorganic & Medicinal Chemistry</i> , Vol. 8, 2000, pp. 1527-1535
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LCM	C14	Davis, B.G., et al., "The controlled introduction of multiple negative charge at single amino acid sites in subtilisin <i>Bacillus lentus</i> ," <i>Bioorganic and Medicinal Chemistry</i> , (1999 Nov.) 7 (11) 2293-301, XPO000892840
DUP	C15	*Davis, Benjamin G, et al., "Controlled Site Selective Glycosylation of Proteins by a Combined Site Directed Mutagenesis and Chemical Modification Approach," <i>J. Org. Chem.</i> , Vol. 63, January 12, 1998 (1998-01-12), pp. 9614-9615
LCM	C16	DeSantis et al., "Chemical Modifications at a Single Site Can Induce Significant Shifts in the pH Profiles of a Serine Protease," <i>J. Am. Chem. Soc.</i> , 120:8582-8586 (1998)
LCM	C17	Desantis, G., et al, "Probing the altered specificity and catalytic properties of mutant subtilisin chemically modified at position S156C and S166C in the S1 pocket," <i>Bioorganic and Medicinal Chemistry</i> , (1997) 7/7 (1381-1387), XP0000892843
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LCM	C19	Dickman, M., et al., "Chemically modified mutants of subtilisin <i>Bacillus lentus</i> catalyze transesterification reactions better than wild type," <i>Tetrahedron Asymmetry</i> , (11. Dec. 1998) 9/23 4099-4102, XPO000901276.

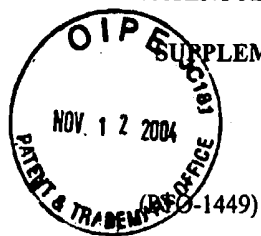
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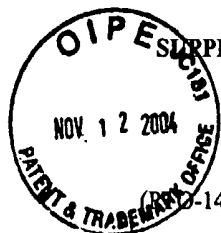
LCM	C20	Gron et al., "A Highly Active and Oxidation-Resistant Subtilisin-Like Enzyme Produced by a Combination of Site-Directed Mutagenesis and Chemical Modification," <u>Eur. J. Biochem.</u> , 194:897-901 (1990)
LCM	C21	Kaiser, "Catalytic Activity of Enzymes Altered at Their Active Sites," <u>Agnew. Chem. Int. Ed. Engl.</u> , 27:913-922 (1988)
LCM	C22	Kawase et al., "Effect of Chemical Modification of Tyrosine Residues on Activities of Bacterial Lipase," <u>Journal of Fermentation and Bioengineering</u> , 72:317-319 (1991)
LCM	C23	Kenyon et al., "Novel Sulfhydryl Reagents," <u>Methods Enzymol.</u> , 47:407-430 (1977)
LCM	C24	Kluger et al., "Amino Group Reactions of the Sulfhydryl Reagent Methyl Methanesulfonylthioate. Inactivation of D-3-hydroxybutyrate Dehydrogenase and Reaction with Amines in Water," <u>Can. J. Biochem.</u> , 58:629-632 (1980)
LCM	C25	Lloyd, R.C. et al., "Site Selective Glycosilation of Subtilisin Bacillus Lentus Causes Dramatic Increase in Esterase Activity," <u>Biorganic & Medicinal Chemistry</u> , Vol. 8, 2000, pp. 1537-1544
LCM	C26	Lo, Bryan, et al., "Replacement of Ala-166 with Cysteine in the High Affinity Rabbit Sodium Glucose Transporter Alters Transport Kinetics and Allows Methanethiosulfonate Ethylamine to Inhibit Transporter Function," <u>The Journal of Biological Chemistry</u> , 273:2 903-909 (1998)
LCM	C27	Neet, K.E. and Koshland, D.E., "The Conversion of Serine at the Active Site of Subtilisin to Cysteine: A 'Chemical Mutation,'" <u>Proc. Nat. Acad. Sci. USA</u> , 56(5):1606-1611.
LCM	C28	Nishimura et al., "Reversible Modification of the Sulfhydryl Groups of <i>Escherichia coli</i> Succinic Thiokinase with Methanethiolating Reagents, 5,5'-Dithio-bis(2-Nitrobenzoic Acid), p-Hydroxymercuribenzoate, and Ethylmercurithiosalicylate," <u>Archives of Biochemistry and Biophysics</u> , 170:461-467 (1975)
LCM	C29	Paulson, J.C., "Glycoproteins: what are the sugar chains for?" <u>TIBS</u> , 14:272-276 (1989)
LCM	C30	Planas et al., "Reengineering the Catalytic Lysine of Aspartate Aminotransferase by Chemical Elaboration of a Genetically Introduced Cysteine," <u>Biochemistry</u> , 30:8268-8276 (1991)
LCM	C31	Plettner, E., et al., "Modulation of Esterase and Amidase Activity of Subtilisin Bacillus Lentus by Chemical Modification of Cysteine Mutants," <u>Journal of the American Chemical Society</u> , (2 Jun. 1999) 121/21, 4977-4981, XPO000891274.
LCM	C32	Plettner, Erika et al., "A Combination Approach to Chemical Modification of Subtilisin Bacillus Lentus," <u>Biorganic & Medicinal Chemistry Letters</u> (Sept. 8, 1998) Vol. 8, No. 17, pp. 2291-2296, XP0004138220
LCM	C33	Polgar et al., "A New Enzyme Containing a Synthetically Formed Active Site. Thiol-Subtilisin," <u>Journal of American Chemical Society</u> , 88:3153-3154 (1966)
LCM	C34	Ramachandran et al., "Stabilization of Barstar by Chemical Modification of the Buried Cysteines," <u>Biochemistry</u> , 35:8776-8785 (1996)
LCM	C35	Roberts et al., "Reactivity of Small Thiolate Anions and Cysteine-25 in Papain Toward Methyl Methanethiosulfonate," <u>Biochemistry</u> , 25:5595-5601 (1986)

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LCM	C36	Siddiqui et al, "Arthrobacter D-Xylose Isomerase: Chemical Modification of Carboxy Groups and Protein Engineering Of pH Optimum," <u>Biochem. J.</u> , 295:685-691 (1993)
LCM	C37	Smith et al., "An Engineered Change in Substrate Specificity of Ribulosebiphosphate Carboxylase/Oxygenase," <u>The Journal of Biological Chemistry</u> , 265:1243-1245 (1990)
LCM	C38	Smith et al., "Chemical Modification of Active Site Residues in γ -Glutamyl Transpeptidase," <u>The Journal of Biological Chemistry</u> , 270:12476-12480 (1995)
LCM	C39	Smith et al., "Restoration of Activity to Catalytically Deficient Mutants of Ribulosebiphosphate Carboxylase/Oxygenase by Aminoethylation," <u>The Journal of Biological Chemistry</u> , 263:4921-4925 (1988)
LCM	C40	Smith et al., "Simple Alkanethiol Groups for Temporary Blocking of Sulfhydryl Groups of Enzymes," <u>Biochemistry</u> , 14:766-771 (1975)
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LCM	C42	Spura, A., et al. "Probing Agonist Domain of the Nicotinic Acetylcholine Receptor by Cysteine Scanning Mutogenesis Reveals Residues in Proximity to the Alpha-Bungarotoxin Binding Site," <u>Biochemistry</u> , 20 Apr. 1999 Vol. 38:16 pp. 4912-4921
LCM	C43	Stewart et al., "Catalytic Oxidation of Dithiols by a Semisynthetic Enzyme," <u>J. Am. Chem. Soc.</u> , 108:3480-3483 (1986)
LCM	C44	Valenzuela et al., "Kinetic Properties of Succinylated and Ethylenediamine-Amidated δ -Chymotrypsins," <u>Biochim. Biophys. Acta</u> , 250:538-548 (1971)
LCM	C45	West et al., "Enzymes as Synthetic Catalysts: Mechanistic and Active-Site Considerations of Natural and Modified Chymotrypsin," <u>J. Am. Chem. Soc.</u> , 112:5313-5320 (1990)
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LCM	C48	Wynn et al., "Comparison of Straight Chain and Cyclic Unnatural Amino Acids Embedded in the Core of Staphylococcal Nuclease," <u>Protein Science</u> , 6:1621-1626 (1997)
LCM	C49	Wynn et al., "Mobile Unnatural Amino Acid Side Chains in the Core of Staphylococcal Nuclease," <u>Protein Science</u> , 5:1026-1031 (1996)
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